Amendments to the Claims:

Please amend claims 55, 58, 59, 63, 66 and 67, add new claims 71-82 and cancel claims 57, 61, 65 and 69. This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-54. (Canceled)

55. (Currently amended) A method for producing ~~a~~ an alpha-1,2-fucosylated oligosaccharide blood type antigen, the method comprising contacting ~~an~~ a *Helicobacter* alpha-1,2-fucosyltransferase polypeptide or bioactive fragment thereof with a type 1 or type 2 oligosaccharide substrate for sufficient time and under conditions such that ~~a~~ an alpha-1,2-fucosylated oligosaccharide blood type antigen is produced, wherein the alpha-1,2-fucosyltransferase polypeptide is encoded by a polynucleotide identical to a polynucleotide that is amplified using *Helicobacter* genomic DNA as a template by PCR using a first primer comprising 5'-GAACACTCACACGCGTCTT-3' (SEQ ID NO:3) and a second primer comprising 5'-TAGAATTAGACGCTCGCTAT-3' (SEQ ID NO:4).

56. (Previously presented) The method of claim 55, wherein the blood type antigen is an H type 1 antigen.

57. (Canceled)

58. (Currently amended) A method for producing an alpha-1,2-fucosylated oligosaccharide blood type antigen, the method comprising contacting an ~~The method of claim 55, wherein the~~ alpha 1,2-fucosyltransferase that has a sequence as set forth in SEQ ID NO:2 with a type 1 or type 2 oligosaccharide substrate for sufficient time and under conditions such that an alpha-1,2-fucosylated oligosaccharide blood type antigen is produced.

59. (Currently amended) A system for producing ~~a~~ an alpha-1,2-fucosylated oligosaccharide blood type antigen, the system comprising:

(a) a host cell transfected or transformed with a polynucleotide encoding an alpha 1,2-fucosyltransferase polypeptide or bioactive fragment thereof, wherein the alpha-1,2-fucosyltransferase polypeptide is encoded by a polynucleotide identical to a polynucleotide that is amplified using *Helicobacter* genomic DNA as a template by PCR using a first primer comprising 5'-GAACACTCACACGCGTCTT-3' (SEQ ID NO:3) and a second primer comprising 5'-TAGAATTAGACGCTCGCTAT-3' (SEQ ID NO:4);

(b) expressing a polypeptide from the polynucleotide;

(c) contacting the host cell with a type 1 or type 2 oligosaccharide substrate under conditions and for sufficient period of time such that the substrate is acted upon by the alpha 1,2-fucosyltranferase or bioactive fragment; and

(d) recovering ~~a~~ the alpha-1,2-fucosylated oligosaccharide blood type antigen.

60. (Previously presented) The system of claim 59, wherein the blood type antigen is an H type 1 antigen.

61. (Canceled)

62. (Previously presented) The system of claim 59, wherein the alpha 1,2-fucosyltransferase has a sequence as set forth in SEQ ID NO:2.

63. (Currently amended) A method for producing an H type blood antigen, the method comprising contacting an alpha-1,2-fucosyltransferase polypeptide or bioactive fragment thereof with a type 1 or type 2 oligosaccharide substrate for sufficient time and under conditions such that an H type blood antigen is produced, wherein the alpha-1,2-fucosyltransferase polypeptide is encoded by a polynucleotide identical to a polynucleotide that is amplified using *Helicobacter* genomic DNA as a template by PCR using a first primer comprising 5'-GAACACTCACACGCGTCTT-3' (SEQ ID NO:3) and a second primer comprising 5'-TAGAATTAGACGCTCGCTAT-3' (SEQ ID NO:4).

64. (Previously presented) The method of claim 63, wherein the H type blood antigen is an H type 1 antigen.

65. (Canceled)

66. (Currently amended) A method for producing an H type blood type antigen, the method comprising contacting an ~~The method of claim 63, wherein the~~ alpha 1,2-fucosyltransferase that has a sequence as set forth in SEQ ID NO:2 with a type 1 or type 2 oligosaccharide substrate for sufficient time and under conditions such that an H type blood type antigen is produced.

67. (Currently Amended) A system for producing H type blood antigen, the system comprising:

(a) a host cell transfected or transformed with a polynucleotide encoding an alpha 1,2-fucosyltransferase or bioactive fragment thereof, wherein the alpha-1,2-fucosyltransferase polypeptide is encoded by a polynucleotide identical to a polynucleotide that is amplified using *Helicobacter* genomic DNA as a template by PCR using a first primer comprising 5'-GAACACTCACACGCGTCTT-3' (SEQ ID NO:3) and a second primer comprising 5'-TAGAATTAGACGCTCGCTAT-3' (SEQ ID NO:4);

(b) expressing the polynucleotide;

(c) contacting the host cell with a type 1 or type 2 oligosaccharide substrate under conditions and for sufficient period of time such that the substrate is acted upon by the alpha 1,2-fucosyltransferase or bioactive fragment; and

(d) recovering ~~an~~ the H type blood antigen.

68. (Previously presented) The system of claim 67, wherein the H type blood antigen is an H type 1 antigen.

69. (Canceled)

70. (Previously presented) The system of claim 67, wherein the alpha 1,2-fucosyltransferase has a sequence as set forth in SEQ ID NO:2.

71. (new) The method of claim 55, wherein the polypeptide is encoded by a polynucleotide having at least 95% identity to SEQ ID NO:2.

72. (new) The method of claim 55, wherein the substrate is a type 1 oligosaccharide.

73. (new) The method of claim 72, wherein the type 1 oligosaccharide substrate is Lewis a.

74. (new) The method of claim 55, wherein the blood type antigen is a type 1 oligosaccharide.

75. (new) The method of claim 74, wherein the type 1 oligosaccharide blood type antigen is Lewis b.

76. (new) The method of claim 55, wherein the substrate is a type 2 oligosaccharide.

77. (new) The method of claim 72, wherein the type 2 oligosaccharide substrate is Lewis x.

78. (new) The method of claim 74, wherein the blood type antigen is a type 2 oligosaccharide.

79. (new) The method of claim 76, wherein the type 2 oligosaccharide blood type antigen is Lewis y.

80. (new) The method of claim 55, wherein the oligosaccharide blood type antigen is purified.

81. (new) The method of claim 55, wherein the oligosaccharide blood type antigen is a glycoconjugate.

82. (new) The method of claim 55, wherein the oligosaccharide blood antigen is attached to a cell.